

6LB6

Beam Power Tube

Duodecar Type

For Color-TV Horizontal-Deflection Amplifier
Circuits Using 240 V to over 400 V "B" Supplies

ELECTRICAL CHARACTERISTICS - Bogey Values

| | | | |
|--------------------------------|------------|------|----|
| Heater Voltage, ac or dc. . . | E_h | 6.3 | V |
| Heater Current | I_h | 2.25 | A |
| Direct Interelectrode | | | |
| Capacitances: ^a | | | |
| Grid No.1 to plate | c_{g1-p} | 0.44 | pF |
| Input: G1 to (K, G3, G2, H). . | c_i | 33 | pF |
| Output: P to (K, G3, G2, H). . | c_o | 18 | pF |

For the following characteristics, see Conditions below:

Amplification Factor

| | | | | | |
|--|--------------|------|------------------|------------------|-----------------|
| (Triode Connection) ^b . . . | μ | — | — | — | 4 ^c |
| Plate Resistance (approx.) | r_p | — | — | — | 6600 Ω |
| Transconductance | g_m | — | — | — | 13400 μ mho |
| DC Plate Current | I_b | — | 900 ^d | 560 ^d | 105 mA |
| DC Grid-No.2 Current. . . . | I_{c2} | — | 110 ^d | 46 ^d | 2.0 mA |
| Cutoff DC Grid-No.1 Volt- | | | | | |
| age for $I_b = 1$ mA | $E_{c1(co)}$ | -125 | — | — | -40 V |

Conditions:

| | | | | | |
|--------------------------------------|--------------------------------|------|-----|-----|-------|
| Heater Voltage | E_h | — | 6.3 | — | V |
| Peak Positive-Pulse | | | | | |
| Plate Voltage ^e | e_{bm} | 5000 | — | — | V |
| DC Plate Voltage | E_b | — | 45 | 50 | 150 V |
| Grid No.3 | Connected to cathode at socket | | | | |
| DC Grid-No.2 Voltage . . . | E_{c2} | 110 | 160 | 110 | 110 V |
| DC Grid-No.1 Voltage . . . | E_{c1} | — | 0 | — | -20 V |

MECHANICAL CHARACTERISTICS

| | |
|---------------------------------|-----------------------------|
| Maximum Overall Length. | 4.375 in (111.12 mm) |
| Maximum Seated Length | 4.000 in (101.6 mm) |
| Maximum Diameter. | 1.563 in (39.7 mm) |
| Dimensional Outline | JEDEC No.12-90 |
| Envelope. | JEDEC T12 |
| Top Cap ^f | Small (JEDEC C1-1 or C1-34) |



Electronic
Components

DATA 1
5-69

6LB6

Base Large-Button Duodecar 12-Pin (JEDEC E12-74)
 Terminal Diagram JEDEC 12GJ
 Type of Cathode Coated Unipotential
 Operating Position Any

MAXIMUM RATINGS – Design-Maximum Values⁹

*For operation as a Horizontal-Deflection-Amplifier Tube
 in a 525-line, 30-frame system*

| | | | |
|---|-------------|-------------------|----|
| DC Plate Supply Voltage | E_{bb} | 990 | V |
| Peak Positive-Pulse Plate Voltage ^h . . . | e_{bm} | 7000 ^k | V |
| Peak Negative-Pulse Plate Voltage . . . | $-e_{bm}$ | 100 | V |
| DC Grid-No.3 Voltage | E_{c3} | 0 | V |
| DC Grid-No.2 (Screen-Grid) Voltage . . . | E_{c2} | 200 | V |
| Peak Negative-Pulse Grid-No.1 (Control-Grid) Voltage | $-e_{c1m}$ | 300 | V |
| Heater-Cathode Voltage: | | | |
| Peak | e_{hkm} | ±200 | V |
| Average ^m | E_{hk} | 100 | V |
| Heater Voltage, ac or dc | E_h | 5.7 to 6.9 | V |
| Cathode Current: | | | |
| Peak | i_{km} | 1100 | mA |
| Average ^m | $I_{k(av)}$ | 315 | mA |
| Grid-No.2 Input | P_{g2} | 5.0 | W |
| Plate Dissipation ⁿ | P_b | 30 | W |
| Envelope Temperature | T_E | 200 ^p | °C |

MAXIMUM CIRCUIT VALUES

| | | | |
|---|----------|-----|----|
| Grid-No.1-Circuit Resistance | R_{g1} | 1.2 | MΩ |
| With Feedback-Type High Voltage Regulation | | | |
| Grid-No.1-Circuit Resistance | R_{g1} | 10 | MΩ |
| With Shunt-Type High Voltage Regulation | | | |
| Grid-No.3-Circuit Resistance | R_{g3} | 0 | Ω |

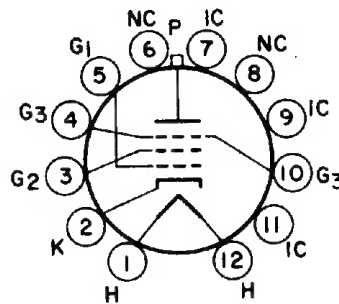
^a Measured without external shield in accordance with the current issue of EIA Standard RS-191.

^b With grid No.3 and grid No.2 connected, respectively, to cathode and plate at socket.

- ^c Conditions: $E_b = E_{c2} = 125 \text{ V}$, $E_{c1} = -25 \text{ V}$.
- ^d This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.
- ^e Under pulse-duration condition specified in Footnote h.
- ^f Designed to mate with connector of 0.250-inch cap, generally available from your local RCA distributor.
- ^g As defined in the current issue of EIA Standard RS-239, unless otherwise specified.
- ^h This rating is applicable when the duration of the voltage pulse does not exceed 15% of one horizontal scanning cycle. In a 525-line, 30-frame system, 15% of one horizontal scanning cycle is 10 μs .
- ^k Absolute-Maximum Value.
- ^m Measured with a DC meter.
- ⁿ An adequate bias resistor or other means is required to protect the tube in the absence of excitation.
- ^p This rating is applicable when measurement is made using a thermocouple attached to a 0.1-inch wide phosphor-bronze ring placed at the hottest location on the envelope. A maximum rating of 220°C is applicable to direct thermocouple measurements taken at the hottest point on the envelope surface.

TERMINAL DIAGRAM (Bottom View)

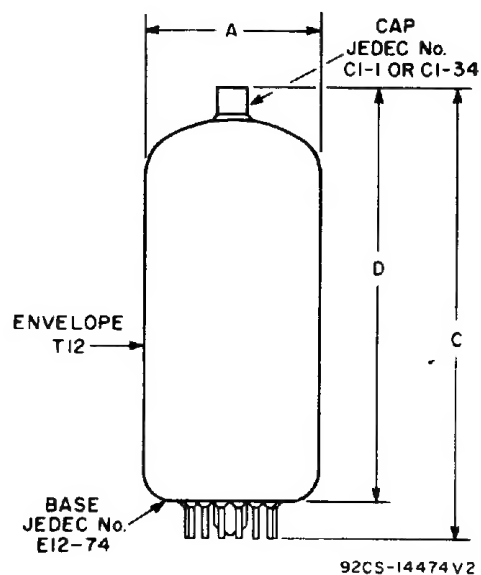
- Pin 1 – Heater
- Pin 2 – Cathode
- Pin 3 – Grid No.2
- Pin 4 – Grid No.3
- Pin 5 – Grid No.1
- Pin 6 – No Internal Connection
- Pin 7 – Do Not Use
- Pin 8 – No Internal Connection
- Pin 9 – Do Not Use
- Pin 10 – Grid No.3
- Pin 11 – Do Not Use
- Pin 12 – Heater
- Cap – Plate



JEDEC 12GJ

6LB6

DIMENSIONAL OUTLINE (JEDEC No.12-90)



| DIMENSION | INCHES | | MILLIMETERS | |
|---|--------|-------|-------------|--------|
| | Min. | Max. | Min. | Max. |
| A | 1.437* | 1.563 | 36.5* | 39.7 |
| C | — | 4.375 | — | 111.12 |
| D | 3.750 | 4.000 | 95.3 | 101.6 |
| MILLIMETER DIMENSION DERIVED FROM INCH DIMENSION | | | | |
| * Applies to the minimum diameter except in the area of the seal. | | | | |